

# PATENT CLAIMS

1. A motor vehicle electrical system, comprising a generator (120), a battery (150), a high-capacity capacitor (400) and a power distributor (210) for controllably supplying energy to individual load circuits (230) of the motor vehicle, wherein
- 5 the generator (120), the battery (150) and the high-capacity capacitor (400) are connected in parallel, and
- 10 the electrical connection line (240) between the battery (150) and the power distributor (210) has a cross-section of less than  $10 \text{ mm}^2$  if the line is less than 2 m long ( $L_{Zul3}$ ) while having a cross-section of less than  $40 \text{ mm}^2$  if the line is more than 2 m long ( $L_{Zul3}$ ).
2. A motor vehicle electrical system according to claim 1, wherein the high-capacity capacitor (400) is mounted adjacent to the power distributor (210).
3. A motor vehicle electrical system according to claim 1, wherein the high-capacity capacitor (400) is mounted inside the power distributor (210).
4. A motor vehicle electrical system according to claim 1 or 2, wherein the electrical connection line (220) between the generator (120) and the power distributor (210) has a cross-section of less than  $10 \text{ mm}^2$ .
5. A motor vehicle electrical system according to one of claims 1 to 4, wherein the electrical connection line (220) between the generator (120) and the power distributor (210) has a cross-section of approximately  $5 \text{ mm}^2$ .
6. A motor vehicle electrical system according to one of claims 1 to 5, wherein the electrical connection line (220) between the generator (120) and the power distributor (210) has a line length ( $L_{Zul1}$ ) of less than 2 m, preferably of less than 1.5 m.

7. A motor vehicle electrical system according to claim 6, wherein the electrical connection line (220) between the generator (120) and the power distributor (210) has a maximum line length ( $L_{Zul1}$ ) of approximately 1 m.
8. A motor vehicle electrical system according to one of claims 1 to 7, wherein the electrical connection line (240) between the battery (150) and the power distributor (210) has a maximum cross-section of approximately  $5 \text{ mm}^2$  if the line is maximally approximately 2 m long ( $L_{Zul3}$ ).
9. A motor vehicle electrical system according to claim 8, wherein the battery (150) and the power distributor (210) are mounted in the engine compartment of the motor vehicle.
10. A motor vehicle electrical system according to one of claims 1 to 6, wherein the electrical connection line (240) between the battery (150) and the power distributor (210) has a maximum cross-section of approximately  $25 \text{ mm}^2$  if the line is maximally approximately 4 m long ( $L_{Zul3}$ ).
11. A motor vehicle electrical system according to claim 10, wherein the battery (150) is mounted in the rear end and the power distributor (210) in the engine compartment of the motor vehicle.
12. A motor vehicle electrical system according to one of claims 1 to 11 wherein the high-capacity capacitor (400) is connected between the generator (120) and the power distributor (210).